

Environmental Management



Dayton's Water Quality History

1870- First Public Drinking Water Well Installed

1890- First Paved Road - Separate Storm & Sanitary Sewers



1913- The Great Flood
Hydromodifications
Levees and Dams



History continues...

1929 - Wastewater Treatment Plant begins operation

1970s - River Bikeways constructed

1980s - Complete plugging of sanitary connections

1988 - Well Field Protection Ordinance adopted

1990 - NPDES Permit Application Regulations

1993 - City of Dayton application submitted

1997 - Municipal Separate Storm Sewer (MS4)
NPDES Permit issued

1997 - Dayton Storm Water Ordinance adopted

2000 - Riverscape attraction downtown

Dayton's Public Water Supply



Ground water under the influence of Surface Water

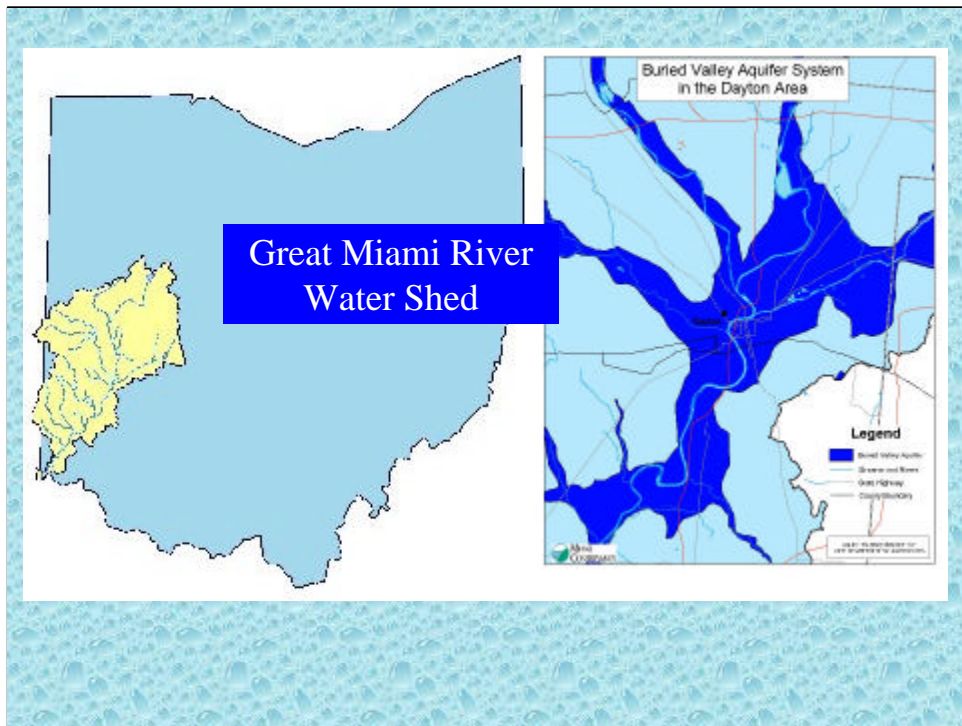
Air Strippers and Recharge Pond



Water Supply and Treatment



Ms. Galbrath briefly outlined the history of Dayton's water quality and public water supply. Many wells are located near highly developed areas. For example, recharge ponds are located within a couple of miles of drinking water wells.







- Prior to 1987 businesses located in close proximity to production wells and recharge ponds
- Prior to fire, groups operated fairly independent of one another

“Aqua-fire” Had Hidden Blessing



The Sherwin-Williams fire in 1987 seemed disastrous at the time as the products in the warehouse threatened to contaminate our drinking water. The smart decision on the part of Dayton's Fire Dept. was to let it burn. Most of the hazardous inventory was destroyed on the land's surface. Cleanup ensued before irreversible groundwater contamination occurred.

“The blessing of the fire was that it called attention to the sensitivity of our groundwater. Through the many media reports, the public learned what an aquifer is and the importance of the aquifer's health to the entire region,” said Lee Drummond, City of Dayton, Environmental Coordinator

- Fire called attention to our groundwater / aquifer
- Media played a big part in the learning process
- The Sherwin-Williams Fire in 1987 called attention to the sensitivity of Dayton's groundwater. Twelve billion dollars was awarded for cleanup.



- The independent groups went through a learning process and recognition that they must work together to protect the public's drinking water
- The result was, and continues to be, the Well Field Protection Program



WHY?



	<p>City: Elected Officials Water Department Economic Development Zoning</p>
<p>Partners</p>	<p>Chamber of Commerce</p>
	<p>Other Jurisdictions: Huber Heights Vandalia Riverside Harrison Township WPAFB</p>
	<p>Mont.Co.Health District</p>

- How were we able to reach final consensus on what the WFPP would entail
- Happened in two phases
 1. Dayton partnerships formed with Elected officials, Water Dept, Economic Dev., Chamber of Commerce
 2. Next: other jurisdictions were brought in to the partnership Very big leap in process for this to take place
- Must have all interested and affected parties brought into process from the very beginning

How Did We Get To Agreement In Dayton

Initial Plan 1987

- Businesses given “license” to operate in WFPA
- Annual Inspections of chemical inventory
- If fail inspection, operating license would be pulled
- Business could no longer operate in WFPA

Economic Development and Businesses were not on board with this plan

Final Plan 1988

- Overlay Zoning
- Regulate chemicals that could contaminate groundwater
- Grandfathered with current chemical inventory, can never be exceeded
- Initiated Well Field Protection Fund to give financial aid for risk reduction projects

Despite Ec. Dev. & Business reservations, WFPA continues to have a 90% occupancy rate

Partners / Neighbors		
Jurisdiction	Concerns	Outcome
Harrison Township	RESENTMENT: Dayton had tried to annex the Twp.	Meetings to alleviate fears
Huber Heights	Farming and product sales: Zoning can't regulate farming Ohio Dept. of Agriculture	Farmers report annual usage and store only one year's worth of chemicals
Wright Patterson Air Force Base	Who has jurisdiction?	MOU: Memorandum of Understanding. First between local jurisdiction and Dept. of Defense and for drinking water protection
Cities of Vandalia and Riverside	Who controls the enforcement of the ordinances and funds?	County Health District City: Zoning & Env.Mgmt. City Wide & County Corp

Partnerships were formed with EPA, the business community, elected officials, economic development, environmental community, water department, public and the media. Once the partnerships were formed, meetings were held to design a plan to address source water protection.



**The Next
Partnership
11/89 – 10/90**

**Dayton
Harrison
Township
Riverside
Vandalia
Huber Heights
WPAFB**

GOAL

The Protection of Our Drinking Water Incorporating the Right Mix of Economic Development



Partners had to address jurisdictional concerns and keep the general public informed. The partnership's goal was to protect source water by incorporating the right mix of economic development.



Business Friendly Contacts

- Chemical Inventory Inspections
- Economic / Funding Incentives
- Location of wells and air strippers

Well Field Protection Area Inspections

Businesses were given incentives to not build near drinking water wells. Risk reduction funding was provided to businesses who actively removed chemicals from their sites and upgraded or removed their underground storage tanks.

RISK REDUCTION FUNDING



RISK POINT BUY DOWNS

- Businesses permanently remove 97% or more of chemicals
- 16 million lb. of chemical removed

0% INTEREST LOANS AND GRANTS TO BUSINESSES

- For tank removals or upgrades, groundwater remediation, and hazardous waste storage



GRANTS TO GOVERNMENTS

- 50% of new storm sewer costs
- Riverside to relocate 1,200,000 lbs of salt to outside the WFPA



Educational Activities



Educational activities such as creating bulletins and holding meetings were key to the success of the partnership.

MIAMI WELL FIELD PLUMES



Why Continue WFPP?



EMERGENCY RESPONSE IN THE WELL FIELD PROTECTION AREA

Dumped in WFPA, by monitoring wells – two heating oil tanks, one old furnace, one old hot water heater. The hot water heater surface was able to retain fingerprints. The investigation is proceeding.



MAD RIVER WELL FIELD PLUMES





FLUSH-MOUNT WELL NEST



IMPACTED FLUSH-MOUNT VAULT



VAULT/WEEL CLOSE-UP



Partnerships needed for development

- Dayton: Water Dept., DIV. Environmental Mngt.(DEM), Co. Health Dept., Zoning, Economic Dev., City Wide, County Corp, Environmental Advisory Board (EAB)
- Other jurisdictions: Huber Heights, WPAFB, Harrison Twp., Vandalia, Riverside

Who Implements the Plan?

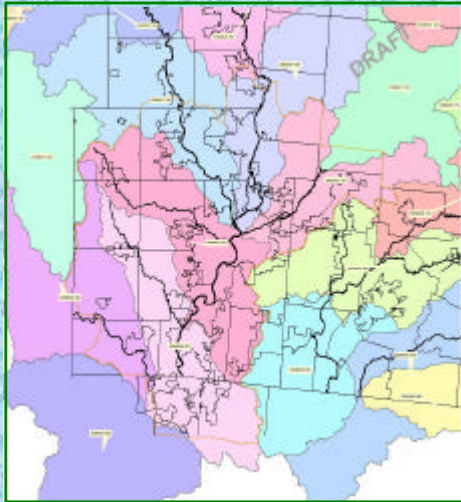
- Regulatory: DEM & Zoning in the city. Used WFPP to set up contract with County Health Dept. to do same in other jurisdictions.
- Non-Regulatory: Use WFPP for contracts with Economic Development & City Wide to assist businesses with WFPP compliance and incentive funding for risk reduction projects. Dayton Environmental Advisory Board (EAB) was appointed by City Commission to provide advice on environmental issues & assist WFPP.

Lessons Learned

Maintaining Partnerships

- Multijurisdictional meetings
 - Workshops
 - PROGRESS News
- Children's Water Festival
- Well Field Fund Board
 - EAB
- Ground Water Guardian awards
 - P2 Notebooks
 - Storm Water Program
- Visibility of water resources
- Relationships with regulatory agencies
- Source Water Assessment Program

Future Challenges



- Source Water Assessment Program
- Determination of upstream area?
- Defined as Groundwater Under the Influence of Surface Water.
- What area will be regulated?
- What will be requirements for analytical testing?
- We will be starting from scratch with new partners who don't use Dayton water.
- Economic, livelihood, recreational
- We are upstream from someone
- Storm Water Programs
- Economy / Funding
- Program must continue to evolve

Future challenges facing Dayton's source water assessment program are to determine upstream areas, regulated areas and requirements for analytical testing; work with new partners who do not use Dayton's water; and continue to provide economic incentives and funding.

